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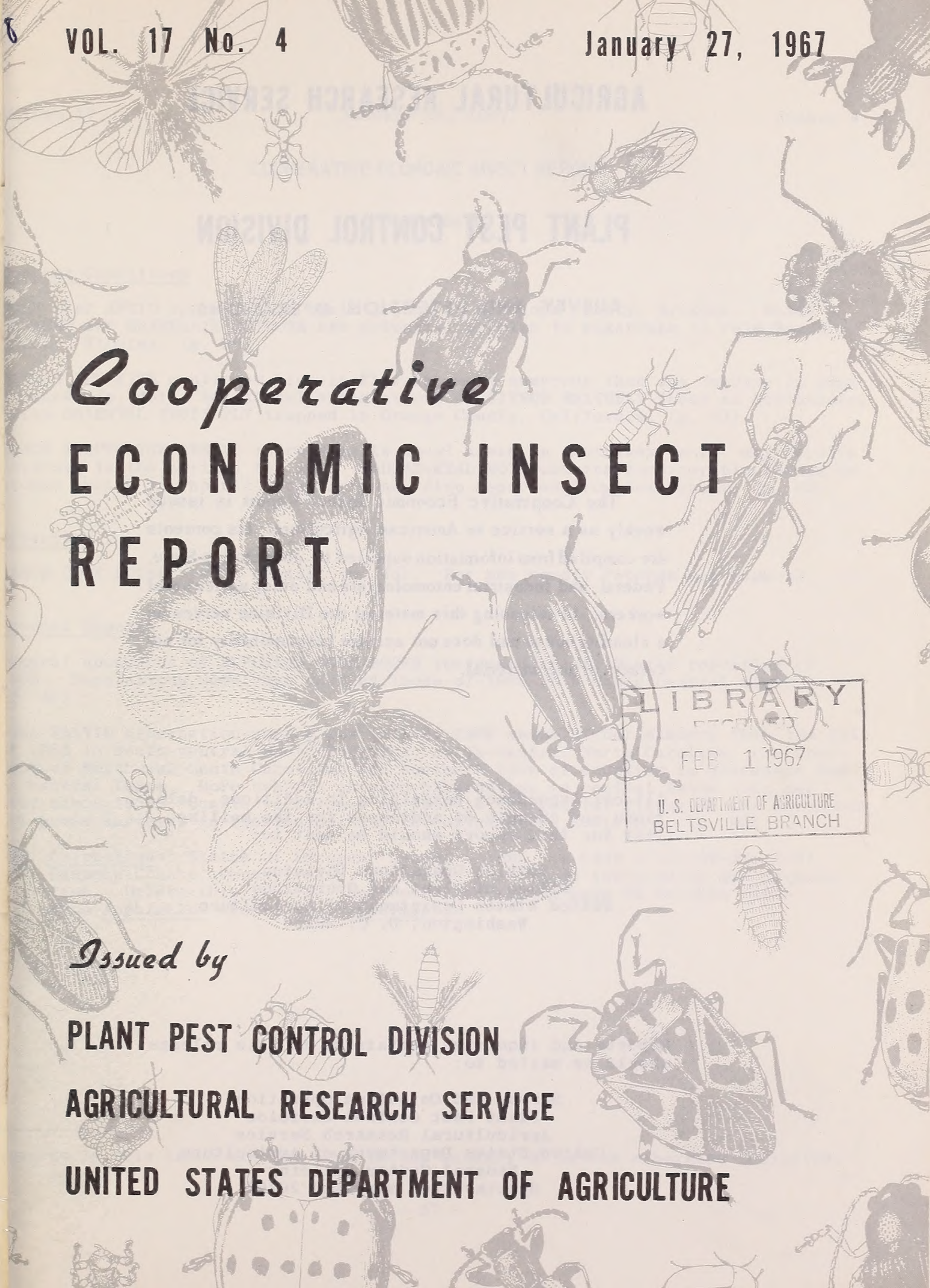
VOL. 17 No. 4 January 27, 1967

Cooperative
ECONOMIC INSECT REPORT



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SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 17 January 27, 1967 Number 4

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID appearing on small grains in Maricopa County, Arizona. BLACK CUTWORM and GRANULATE CUTWORM are potential problem to sugarcane in Palm Beach County, Florida. (p. 39).

CITRUS RED MITE continues high in Florida, more numerous than any January in past 5 years. (p. 40). Additional infestations of CITRUS WHITEFLY found in Sacramento; fifth ORIENTAL FRUIT FLY trapped in Orange County, California. (p. 43).

BLACK TURPENTINE BEETLE increasing in local areas in southeast Texas; may require controls in the spring. (p. 44). INDIAN-MEAL MOTH causing considerable losses to stored grains in Phoenix area, Arizona. Also reported from New Mexico. (p. 42).

Detection

LARGE DUCK LOUSE new to Hawaii. (p. 45). For new county records see page 43.

Special Reports

General abundance of EUROPEAN CORN BORER increased in all States reporting in 1966. Populations more than doubled those of 1965 in 9 North Central States. (p. 46).

BOLL WEEVIL hibernation survey for fall of 1966 shows higher numbers than the fall of 1965 in south-central South Carolina, north-central North Carolina, the Piedmont of North and South Carolina, the southern tier of counties in Tennessee and in central Texas. More weevils entered hibernation in central Texas than any year since 1959. Counts were lower in 1966 in the Coastal Plains of the Carolinas, all areas surveyed in Mississippi and in northeastern Louisiana. (p. 53).

● Correction: Status of European Chafer - 1966, in CEIR 17(3):36-37, 1967. Dauphin County, Pennsylvania, erroneously shown as infested in map preparation. Delete this record. See corrected map on page 56 in this issue. Also Amphimalon should read Amphimallon.

Reports in this issue are for week ending January 20 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JANUARY 23, 1967

HIGHLIGHTS: Blizzard Northern Plains brought record cold followed by record heat. Mild in West with flooding rains in California.

PRECIPITATION: The big early week blizzard, in the Great Plains, moved across the Great Lakes, and into Canada. Snow, reaching a depth of 2 feet in Minnesota, clogged the roads and snow plows ceased operating until winds and snowfall diminished. Lighter snow, sleet, and freezing rain fell south of the big storm - from Arkansas to Tennessee and neighboring States and in the Appalachians farther north. A storm at sea began pounding the northern Pacific coast at midweek. Winds increased to hurricane force, reaching 93 m.p.h. at Cape Blanco, Oregon. Heavy rains fell along the coast with snow in the Olympic Mountains, the Cascades, and northern Sierras. Depths reached 200 inches above 5,000 feet in Washington. Heavy rains drenched the San Francisco area Friday night as showers and mountain snows spread over a seven-State area from the Pacific Ocean to the Rocky Mountains. Snow clogged highways and mountain passes. Lakeview, Oregon, received 27 inches of snow in 36 hours. Desert areas received heavy rains as semi-arid Susanville, California, received more than 2 inches on Saturday. Rains slackened Sunday leaving storm totals of 12.80 inches at Bush Creek Ranger Station, 10.10 inches at De Salba, and 9.47 inches at Blue Canyon, all in California. Gusty winds blew through the mountain passes and down the eastern slopes in Montana and Wyoming. Livingston, Montana, registered 81 m.p.h. winds on Thursday forenoon. In contrast, a large area from Arizona to Ohio continued a dry pattern of several weeks' duration. At the end of the period, a new storm is beginning to lash the Pacific coast.

Weather continued on page 45.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Light on alfalfa in warmer areas of Maricopa County and in Queen Creek area of Pinal County. (Ariz. Coop. Sur.). KANSAS - Ranged 0-20 per square foot in Cowley County. (Simpson). ARKANSAS - Few found in northwest area, probably due to decreased growth. (Boyer). MISSISSIPPI - Light on alfalfa; adults and nymphs 3-5 per square foot in Oktibbeha County, 10-20 in Pontotoc County. (Dinkins).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Light in Curry County wheat fields. (Campbell, Mathews). KANSAS - Very light in south-central area. None found in majority of wheat fields although occasional field contained 1-3 per linear foot. (Simpson). ARKANSAS - This species and Macrosiphum avenae continue low due to weather conditions. (Boyer).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Appearing on small grains throughout Maricopa County. (Ariz. Coop. Sur., Jan. 13).

CORN, SORGHUM, SUGARCANE

BLACK CUTWORM (Agrotis ipsilon) - FLORIDA - This species and, to lesser extent, Feltia subterranea are potential problem to 200-acre commercial field of recently planted sugarcane at Belle Glade, Palm Beach County. Cutworms currently heavy on ragweed in this field. Larvae may feed on sugarcane when no ragweed remains. Field treated for wireworms, but not specifically for cutworms. (Genung).

SMALL GRAINS

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - ARIZONA - Scattered and light in grain fields in Mesa, Chandler, Gilbert and Tempe areas of Maricopa County. (Ariz. Coop. Sur., Jan. 13).

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Light on wheat, 0-3 per linear foot in Kiowa County. (Okla. Coop. Sur.). FLORIDA - Increasing on rye at Gainesville, Alachua County. Nymphs and adults range 450-500 per 100 sweeps. (Mead).

LEAFHOPPERS - FLORIDA - Several species collected in 100 sweeps of rye at Gainesville: Graminella nigrifrons 23; Macrosteles fascifrons 7; Balclutha hebe 4; B. rosea 2. (Fla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - KANSAS - Ranged 5-10 per linear foot in Butler, Cowley and Sumner Counties. None found in other south-central counties. (Simpson).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MISSISSIPPI - Light in 40 acres of alfalfa in Leflore County; 3-5 third-stage larvae per square foot. (Dinkins).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Adults have not increased during past 2 weeks in Maricopa County alfalfa fields. Egg-laying activity light. (Ariz. Coop. Sur.).

ROUGH-SKINNED CUTWORM (Proxenus mindara) - CALIFORNIA - Larvae light in 10-acre planting of alfalfa in Fresno, Fresno County. This species on increase and has occurred throughout year. (Cal. Coop. Rpt.).

PEA APHID (Acyrthosiphon pisum) - ARIZONA - Very light numbers appearing in Maricopa and Pinal County alfalfa. (Ariz. Coop. Sur.). NEW MEXICO - Light to moderate on alfalfa in Chaves County. (Mathews). KANSAS - Ranged 25-50 per square foot on alfalfa in Cowley County. (Simpson). ARKANSAS - Continues with little change due to weather conditions. (Boyer). MISSISSIPPI - Moderate, 20-25 adults and nymphs per square foot, on alfalfa in Leflore County. (Dinkins).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - MISSISSIPPI - Light, 1-3 adults per square foot, on alfalfa in Pontotoc County. (Dinkins).

A LEAFHOPPER (Cuerna costalis) - FLORIDA - Nine adults taken in 100 sweeps of blue lupine at Gainesville. (Fla. Coop. Sur.).

SUGARBEETS

SOUTHERN GARDEN LEAFHOPPER (Empoasca solana) - ARIZONA - Beginning to increase on sugarbeets in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Continues light on sugarbeets in Chandler, Mesa and Buckeye areas of Maricopa County. (Ariz. Coop. Sur.).

CELERY LEAF TIER (Udea rubigalis) - ARIZONA - Light in 2 sugarbeet fields in Chandler area of Maricopa County. (Ariz. Coop. Sur., Jan. 13).

COLE CROPS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - CALIFORNIA - Larvae feeding heavily on leaves of Chinese cabbage in truck garden in Santa Maria, Santa Barbara County. Populations widespread this year. (Cal. Coop. Rpt.).

DIAMONDBACK MOTH (Plutella xylostella) - FLORIDA - Larvae abundant on wild crucifers in Belle Glade area. Heavily damaging one-acre field of rutabagas at Springhead, Hillsborough County. (Genung, Vaughan).

CROSS-STRIPED CABBAGEWORM (Evergestis rimosalis) - FLORIDA - Severe on 5 acres of collards at Turkey Creek, Hillsborough County. (Vaughan).

GENERAL VEGETABLES

GREEN CLOVERWORM (Plathypena scabra) - TEXAS - Larvae light in spinach near Crystal City, Zavala County. (Raney).

AN ONION APHID (Micromyzus formosanus) - CALIFORNIA - Infesting onion sets at seed company in Anaheim, Orange County. (Cal. Coop. Rpt.).

CITRUS

Citrus Insect Situation in Florida - Mid-January - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 67 percent of groves (norm 61 percent); 45 percent economic (norm 44 percent). Population increased into high range and will remain high; also is above normal abundance for mid-January on both leaves and fruit. Highest districts west, north and central. CITRUS RED MITE (Panonychus citri) infested 50 percent of groves (norm 37 percent); 21 percent economic (norm 10 percent). Population increased and expected to continue near current moderate level. More numerous than in any January in past 5 years, but less numerous than in most years prior to that. Highest districts west, north and east. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 42 percent of groves (norm 33 percent); 12 percent economic (norm 11 percent). Population slightly above normal but in low range. Further increase expected which will cause few important infestations. Highest districts west and north. GLOVER SCALE (*Lepidosaphes gloverii*) infested 78 percent of groves; 13 percent economic. Population near normal and in moderate range. Slight decrease expected. Highest districts central, east and south. PURPLE SCALE (*L. beckii*) infested 78 percent of groves; 8 percent economic. Population normal and in moderate range. Little change expected. Highest district central. YELLOW SCALE (*Aonidiella citrina*) infested 66 percent of groves; 13 percent economic. Population above average and in moderate range. Little change expected. Highest districts east and central. CHAFF SCALE (*Parlatoria pergandii*) infested 50 percent of groves; 3 percent economic. Below normal abundance and in low range. No change expected. Highest district central. BLACK SCALE (*Saissetia oleae*) infested 40 percent of groves; 13 percent economic. No change expected from current low level normal for January. Highest district central. (W. A. Simanton, (Citrus Expt. Sta., Lake Alfred, Fla.)).

AN ARMORED SCALE (*Unaspis citri*) - FLORIDA - Adults and nymphs moderate on 20 percent of 149,000 citrus seedling trees in nursery at Astatula, Lake County. (Simpson). Moderate on 5 percent of 6,000 mixed citrus seedlings in nursery at Chuluota, Seminole County. (Kipp).

CITRUS RUST MITE (*Phyllocoptruta oleivora*) - FLORIDA - This species and *Panonychus citri* moderate on 80 percent of 500 kumquat plants at Ft. Lonesome, Hillsborough County. (Vaughan).

TEXAS CITRUS MITE (*Eutetranychus banksi*) - FLORIDA - Severe on 85 percent of 2,000 citrus seedlings at Springhead, Hillsborough County. (Vaughan). Moderate on 40 percent of 3,000 sweet orange seedlings at Sanford, Seminole County. (Kipp).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - No cases reported in U. S. January 15-21. Total of 59 cases reported in portion of Barrier Zone in Republic of Mexico January 8-14 as follows: Baja California 1, Territorio sur de Baja California 6, Sonora 42, Chihuahua 2, Nuevo Leon 5, Tamaulipas 3. Two cases reported from Mexico south of Barrier Zone. Barrier Zone is area where eradication operations underway to prevent establishment of self-sustaining population in U. S. Sterile screw-worm flies released January 15-21: Texas 13,486,250, Mexico 94,376,000. (Anim. Health Div.).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Ranged 28-30 per head on steers and 17-20 per head on cows in Harper County; 8-10 per head on steers and 7-8 per head on cows in Payne County. Moderate in Mayes and Cotton Counties. (Okla. Coop. Sur.). KANSAS - Up to 15 grubs per animal on steers at Hays Experiment Station. (Harvey).

MOSQUITOES - LOUISIANA - Larval collections in Jefferson Parish contained *Aedes vexans*, *Anopheles crucians*, *Culex restuans*, *Culex salinarius*, and *Culiseta inornata*. Mosquitoes averaged 2.0 per night in 20 light traps throughout parish. *Culex salinarius* and *Culiseta inornata* dominant. (Stokes). TEXAS - During December, flights of *Aedes sollicitans* and *Culex salinarius* occurred in Jefferson County. *Culiseta inornata* was common. One flight of *C. salinarius* was noted after dark with temperatures of 45-50°. (Thompson).

HOG LOUSE (*Haematopinus suis*) - OKLAHOMA - Moderate on hogs in Mayes County. (Okla. Coop. Sur.).

CATTLE LICE - IOWA - Survey at 1 packing plant indicated populations were light; approximately 60 percent *Solenoptes capillatus*; 30 percent *Bovicola bovis*; and 10 percent *Linognathus vituli*. (Stockdale, Mast).

PACIFIC COAST TICK (Dermacentor occidentalis) - CALIFORNIA - Nymphs infesting quail in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

STORED PRODUCTS

INDIAN-MEAL MOTH (Plodia interpunctella) - NEW MEXICO - Light to moderately heavy populations in feed and seed at Farmington, Aztec and Bloomfield areas, San Juan County. (Heninger). ARIZONA - Heavy numbers in commercial storage buildings in Phoenix area, Maricopa County, caused considerable losses to stored grains. Repeated control efforts necessary. (Ariz. Coop. Sur., Jan. 13).

FEDERAL & STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - OKLAHOMA - Two areas checked for egg pods in Beckham County; averaged 0.5 viable egg pod per square foot of sod in one area, negative in other area. (Okla. Coop. Sur.).

BOLL WEEVIL COMPLEX (Anthonomus grandis complex) - ARIZONA - Field inspections continued in the Colorado River Valley from southern Yuma County northward to cotton-growing area above Topock in Mohave County. These inspections failed to reveal presence of weevils in these areas this season. Observations in other parts of Yuma County, particularly in upper Gila Valley area, also failed to reveal the weevil this season, although weevils were generally present in considerable numbers in this area last year. Observations showed weevil development this season has been very late. At end of December 1966, 5 cotton-growing areas in western Maricopa County known to have weevil infestations were the Rainbow Valley, Tonopah, lower Gila Valley, Harquahala Valley, and northwest Buckeye. (PPC West. Reg.).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Lint cleaner inspections during December 1966 readily revealed larvae from all cotton-growing areas of State except Greenlee, Chochise, Santa Cruz and southern Pima Counties. Largest number of larvae found continues to be in Salt River Valley area of Maricopa County; 94 inspections during month in eastern part of valley revealed more than 33,000 larvae. CALIFORNIA - Cumulative collections for 1966 season as follows: Imperial County - Imperial Valley 1,081 adults, 846 larvae; Bard Valley 677 adults, 1,449 larvae. San Diego County - Borrego Valley 25 adults, no larvae. Riverside County - Palo Verde Valley 3,133 adults, 15,043 larvae; Coachella Valley 79 adults, 22 larvae. San Bernardino County - Needles 145 adults, 9 larvae; Sandy Valley 1 adult, no larvae. Kern County - Cantil 2 adults, 2 larvae. Los Angeles County - Lancaster 4 adults, no larvae. One larva taken from Cantil cotton gin trash ginned at Thermal in Coachella Valley December 14. (PPC West. Reg.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Chemical Control Zone - Total of 85,070 trees inspected on 1,506 properties in 11 municipios in Tamaulipas, Nuevo Leon and Baja California; infestations found on 2 properties in Linares, Nuevo Leon. Total of 7,871 trees on 133 properties were sprayed in 2 municipios of Nuevo Leon. Biological Control Zone - Total of 9,033 trees on 10 properties in Municipios Hidalgo, Guemez, Cadilla, Mainero and Villagran, Tamaulipas, inspected. Light infestations were found in 732 trees on 5 properties in Hidalgo, Guemez and Padilla. Parasites (Amithus hesperidum) were collected at Guemez and released at an orchard in Padilla; also, 9,500 Prospaltella opulenta (a eulophid wasp) were released in another orchard at Padilla. (PPC Mex. Reg., Nov. Rpt.).

CITRUS WHITEFLY (Dialeurodes citri) - CALIFORNIA - Additional infestations found in Sacramento, Sacramento County. Treatment in this area planned for spring. Treatment is underway in known infested area of San Diego, San Diego County. (Cal. Coop. Rpt.).

ORIENTAL FRUIT FLY (*Dacus dorsalis*) - CALIFORNIA - One male taken in trap at Fullerton, Orange County. This is fifth fly trapped in Orange County. No larvae have been found. Eradication action continues. None taken in commercial orchards. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - First male fly of season taken December 28, 1966, in trap located in 10-acre grapefruit grove in Hidalgo County 2.5 miles north of Ware Road, McAllen. (PPC South. Reg.).

CARIBBEAN FRUIT FLY (*Anastrepha suspensa*) - FLORIDA - Adults trapped at Key West, Monroe County, and Sarasota, Sarasota County. (Buchanan et al., Jan. 13).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Small areas of infestation found in Alachua, Orange and Union Counties. ALABAMA - Significant population buildup occurring in strip-mining area in Walker County. TEXAS - Approximately 43,000 acres found infested in Brazoria and Fort Bend Counties; smaller areas found in Colorado and Harris Counties. Many new mounds being found on road shoulders in San Antonio area. (PPC South. Reg., Dec. Rpt.).

INSECT DETECTION

New State Record

LARGE DUCK LOUSE (*Trinoton querquedulae*) - HAWAII - Collected from dead ducks at Lihue, Kauai, January 3, 1967, by J. Swedberg. Det. by R. C. Joyce. (p. 45).

New County Record

RUSTY PLUM APHID (*Hysteroneura setariae*) - CALIFORNIA - Collected from saltgrass at Fullerton, Orange County. (p. 44).

CORRECTIONS

CEIR 16(44):1035 - A MARGARODID SCALE (Kuwania querus (Kuwana)) should read Kuwania quercus.

CEIR 17(3):32 - NATIVE HOLLY LEAF MINER (Phytomyza iliciola) should read *A HOLLY LEAF MINER (Phytomyza sp.)*.

CEIR 17(3):35 - Status of European Chafer, 1966 - Line 1: Amphimalon majalis should read Amphimallon majalis.

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 1/17, 1 light trap - Granulate cutworm (*Feltia subterranea*) 1. Sanford - 1/12-14, 1 light trap - Black cutworm (*Agrotis ipsilon*) 8, granulate cutworm 14, corn earworm (*Heliothis zea*) 1, yellow-striped armyworm (*Prodenia ornithogalli*) 3. SOUTH CAROLINA - Charleston - 1/9-15, 1 BL, temp. 29-68°, precip. 1.91 - Armyworm (*Pseudaletia unipuncta*) 1, yellow-striped armyworm 5, black cutworm 3, granulate cutworm 8.

ORNAMENTALS

TWIG GIRDLER (Oncideres cingulata) - TEXAS - Moderate activity common on pecans, figs, and roses in Austin, Travis County. This unusual situation, as larvae usually spend most of winter in dead twigs previously girdled by female. (Thompson).

AZALEA LACE BUG (Stephanitis pyrioides) - FLORIDA - Adults and nymphs moderate on 25 percent of 314 Formosa azalea (Rhododendron indicum) plants at Frostproof, Polk County. Control required. (Keen, Wyles).

RUSTY PLUM APHID (Hysteroneura setariae) - CALIFORNIA - Nymphs and adults heavy on Distichlis spicta (saltgrass) in Fullerton, Orange County, and light on sugarcane in San Diego, San Diego County. First record for Orange County. (Cal. Coop. Rpt.).

TULIP BULB APHID (Dysaphis tulipae) - CALIFORNIA - Nymphs and adults infesting iris bulbs in nursery at Half Moon Bay, San Mateo County. (Cal. Coop. Rpt.).

A MEALYBUG (Chorizococcus californicus) - CALIFORNIA - Medium on highway plantings of Eremocarpus setigerus in Merced, Merced County. (Cal. Coop. Rpt.).

A PSYLLID (Euphyllura sp.) - CALIFORNIA - Nymphs, probably E. arbuti, medium on madrone trees in Los Gatos, Santa Clara County. (Cal. Coop. Rpt.).

ARMORED SCALES - FLORIDA - Fiorinia theae moderate to severe on camellia and Chinese holly at 3 nurseries in Seminole County. Chrysomphalus aonidum moderate to severe on 70 percent of 250 holly plants in nursery at Lake Monroe, Seminole County. (Kipp).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Medium on Viburnum suspensum nursery stock in San Diego, San Diego County. (Cal. Coop. Rpt.).

TUMID SPIDER MITE (Tetranychus tumidus) - FLORIDA - Adults moderate in 20 percent of 2,200 young viburnum plants at Brandon, Hillsborough County. (Simmons).

AN ERIOPHYID MITE (Paracalacarus podocarpi) - FLORIDA - Adults severe on 90 percent of 20,000 podocarpus nursery plants at Lithia, Hillsborough County. (Vaughan).

FOREST AND SHADE TREES

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Larvae moderately infesting oak in Santa Cruz, Santa Cruz County. This area severely damaged past 3 years. (Cal. Coop. Rpt.).

A PHYCITID MOTH (Dioryctria abietella) - CALIFORNIA - Adults medium in Douglas-fir grafts in seed orchard at Placerville, El Dorado County. (Teillion, USFS).

BARK BEETLES (Dendroctonus spp.) - TEXAS - Survey during October 1966 indicated D. frontalis populations in Angelina, Chambers, Hardin, Jasper, Liberty, Newton, Orange, Polk, San Augustine, San Jacinto, Trinity, and Tyler Counties were slightly higher than at same time last year. D. terebrans populations and amount of tree mortality increased in local areas. Damage expected to continue in many areas and will necessitate control during next season. (Texas Coop. Rpt.).

ENGRAVER BEETLES (Ips spp.) - TEXAS - I. avulsus, I. grandiocollis, I. calligraphus activity noneconomic in 12 southwest counties. (Texas Coop. Rpt.). CALIFORNIA - Adults, probably I. confusus, heavy in bark of pine trees at Cambria, San Luis Obispo County. (Cal. Coop. Rpt.).

PINE BARK APHID (Pineus strobi) - MARYLAND - Light to medium on several white pines at New Carrollton, Prince Georges County. (U. Md., Ent. Dept.).

HAWAII INSECT REPORT

New State of Hawaii Record

Nymphs and adults of LARGE DUCK LOUSE (*Trinoton querquedulae*) were found on native Koloa duck and immigrant pin-tail duck in Lihue, Kauai, January 3, 1967, by J. Swedberg. Specimens collected from dead ducks. Det. by R. C. Joyce. (Chong).

Turf

Light adult population of a BILLBUG (*Sphenophorus venatus vestitus*) noted at Kaanapali Golf Course on Maui. (Miyahira).

Fruits and Nuts

BARNACLE SCALE (*Ceroplastes cirripediformis*) nymphs extremely heavy in spots in 200-acre passion-fruit farm at Kahului, Maui. (Miyahira). MELON APHID (*Aphis gossypii*) heavy on flowers of potted macadamia plants in Hilo, Hawaii Island. (Yoshioka, Funasaki).

Forest and Shade Trees

Adults of a PLATASPID BUG (*Coptosoma xanthogramma*) heavy on hau trees (*Hibiscus tiliaceus*) on residential property at Kahaluu, Oahu. (Au). A BARK BEETLE (*Xylosandrus compactus*) - Light on Australian redcedar and 2 species of hibiscus at Waiakea Arboretum in Hilo, Hawaii Island. Light on tropical ash (*Fraxinus uhdei*) and mamaki (*Pipturus* sp.) at Waiakea reforestation area. On Oahu, heavy on some Kiawe trees and klu at Barbers Point. (Yoshioka, Davis). CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) light to medium on Chinese banyan in Hilo, Hawaii Island. A predacious anthocorid bug (*Montandoniola moraguesi*) numerous in curled, infested leaves. (Funasaki).

Miscellaneous Insects

CABBAGE APHID (*Brevicoryne brassicae*) extremely heavy on *Brassica* sp. in Pohakuloa area of Mauna Kea Forest Reserve, Hawaii Island. (Yamayoshi). Heavy larval populations of a NOCTUID MOTH (*Achaea janata*) defoliated castorbean plants in Makawao, Maui and Waianae, Oahu. (Miyahira, Suzukawa). SOUTHERN GREEN STINK BUG (*Nezara viridula*) building up in Ewa, Oahu, on weed hosts, particularly on asystasia. Numerous nymphal clusters observed. (Davis).

Weather continued from page 38.

TEMPERATURE: One could easily be misled by the weekly temperature map showing much of the Nation averaging within a few degrees of normal. Over the Middle and Eastern States, the first few days were bitter cold followed by a rapid warming trend. Nebraska, for instance, averaged 25° below normal on Tuesday and 30° above normal on Sunday. Pennsylvania averaged 15° below normal early in week and 15° above normal over the weekend. The Deep South had a similar pattern. The early week blizzard over the northern Great Plains was the worst since last March. Winds at Jamestown, North Dakota, reached 62 m.p.h. and the South Dakota Highway Patorl reported trucks blown off the roads. Hibbing, Minnesota, registered -47° Wednesday morning. Subzero cold extended to southern Illinois and subfreezing temperatures reached the Gulf of Mexico. By Sunday, April-like weather replaced the intense cold with temperatures reaching the 70's in Kansas, Missouri, and Virginia. Wichita, Kansas, registered 75°, a new January record. The warm gulf air brought heavy fog to much of the Southeast. A mild temperature pattern continued from the Rockies westward for the second week. (Summary supplied by Environmental Data Service, ESSA).

Status of the European Corn Borer in 1966[1]

Introduction: Cooperating agricultural agencies in 14 States reported on surveys conducted in their States to determine the abundance and distribution of European corn borer (*Ostrinia nubilalis* (Hübner)) in 1966. All survey data, summaries or records of field observations were submitted to Survey and Detection Operations in Hyattsville, Maryland, for final processing. Personnel of Entomology Research Division, Agricultural Research Service, kindly reviewed the material after completion.

The 1966 European corn borer survey was conducted during the late summer and fall of the year. The survey is designed to measure the fall populations of European corn borer larvae and is conducted during a favorable time to include a high percentage of late instars, wherever possible. In all cases, except for some minor differences in compiling data, the accepted survey methods were followed. The survey was continued on a district basis whenever possible in 1966. A district is usually a group of counties within a State, in most cases based on Crop Reporting Districts.

Several of the States reduced the number of districts and/or the number of counties within districts surveyed in 1966; however, the results are comparable with previous years. These changes are indicated in Tables 1 and 2 as footnotes.

New Distribution: European corn borer was reported for the first time from 18 new counties during 1966 according to ARS records; however, these new counties were found in States already known to be infested. This was 7 more than reported the previous year; 11 new counties were reported in 1965, all in South Carolina. This compares with 5 new counties in 3 States in 1964, 25 new counties in 1963, 4 in 1962, 15 in 1961 and 6 in 1960.

The new counties reported infested in 1966 were as follows: South Carolina - Abbeville, Anderson, Calhoun, Cherokee, Clarendon, Fairfield, Greenwood, Hampton, Jasper, Laurens, McCormick, Saluda and Spartanburg; North Dakota - Bowman, Golden Valley, Mountrail, Rolette and Slope.

Abundance: The general abundance of European corn borer larvae increased in all States reporting in 1966. Populations were more than double those in 1965 in 9 of the 11 North Central States included in the survey. Substantial increases were also noted in Delaware, Maryland, Indiana, Missouri and Arkansas. The number of borers per 100 plants in the North Central States averaged 120 in 1966 compared with 57 in 1965, an overall 2-fold increase. The largest single increase in borer numbers was in southeast Iowa where the population averaged 351 borers per 100 plants compared with 108 in 1965. Substantial increases in borer numbers were also noted in northeast Arkansas, northern Missouri, northeast Kansas and southeast Nebraska, as well as in southeast South Dakota and west central Illinois. Average populations were over 300 borers per 100 plants in Delaware and on the Eastern Shore of Maryland. There were 14 districts in the North Central States where counts of over 200 borers per 100 plants were found in 1966. In 17 districts, borer populations were more than 100 per 100 plants but less than 200. In the remaining 44 districts included in the North Central States, populations were less than 100 borers per 100 plants.

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[1] Survey data provided by State agricultural agencies. Data compiled and summarized by Survey and Detection Operations, Plant Pest Control Division, Agricultural Research Service, United States Department of Agriculture.

Table 1. Summary by States of European Corn Borer Abundance in Corn, Fall of 1966, Compared with Data for 1965

States	1965			1966			Comparable Districts or Counties Surveyed Both Years		
	No. of Districts Surveyed	Average No. of Borers Per 100 Plants	No. of Counties Surveyed	No. of Districts Surveyed	Average No. of Borers Per 100 Plants	No. of Counties Surveyed	Number	Borers Per 100 Plants 1965	Borers Per 100 Plants 1966
Eastern									
Delaware	1	209	3	1	307	3	1	209	307
Maryland	3	117	21	3	185	13	3	117	185
Total	4		24	4		16			
Average 1/								163	246
North Central									
Illinois	7	50	37	7	118	37	7	50	118
Indiana	12	38	92	12	44	92	12	38	44
Iowa	12	56	99	12	143	99	12	56	143
Kansas	3	48	24	3	131	24	3	48	131
Minnesota	7	22	67	7	56	34	7	22	56
Missouri 2/	5	199	26	5	299	26	5	199	299
Nebraska 3/	5	67	26	5	130	26	5	67	130
North Dakota 4/	1	84	5	1	190	5	1	84	190
Ohio	5	12	33	5	39	33	5	12	39
South Dakota	6	44	35	6	146	35	6	44	146
Wisconsin	9	6	52	9	27	52	9	6	27
Total	72		496	72		463			
Average 1/								57	120
Southern									
Arkansas 5/	3	22	15	3	73	11	3	22	73

1/ Weighted averages based on districts surveyed.

2/ Missouri figures for 1965 adjusted for comparison with those of 1966.

3/ Average for 1965 adjusted to coincide with extent of 1966 survey.

4/ Based on 1 district and 5 counties comparable to 1965 survey.

5/ Average for 1965 adjusted to exclude east central district, not surveyed in 1966.

Table 2 - European Corn Borer Abundance in Corn, Fall of 1966, Compared with Data for 1965

State (Districts or Counties)	Average Number of Borers Per 100 Plants	
	1965	1966
Arkansas (Ark. Ins. Sur.)		
Northwest	9	4
North Central	13	0
Northeast	43	215
Average	22	73
Delaware (Agr. Expt. Sta.)		
New Castle	106	126
Kent	249	437
Sussex	273	358
Average	209	307
Illinois (Natural History Survey, Ext. Ser.)		
Northwest	43	98
Northeast	21	47
West	83	249
Central	42	267
East	30	41
West-southwest	63	74
East-southeast	67	47
Average	50 (51)1/	118 (120)1/
Indiana (Ext. Ser., Expt. Sta.)		
North-northwest	41	60
North-northcentral	54	119
North-northeast	50	11
Northwest	34	33
North Central	15	24
Northeast	18	23
Southwest	23	26
South Central	26	21
Southeast	24	25
South-southwest	62	71
South-southcentral	55	61
South-southeast	48	59
Average	38	44
Iowa (State Dept. of Agr.; Ext. Ser.; Ent. Dept., Iowa State Univ.; ENT, ARS, USDA)		
District I	46	134
District II	19	94
District III	4	61
District IV	42	130
District V	37	114
District VI	68	49
District VII	37	152
District VIII	86	120
District IX	95	174
District X	30	142
District XI	103	194
District XII	108	351
Average	56	143
Kansas (Ins. Sur.)		
Northeast	93	274
North Central	19	38
East Central	31	82
Average	48	131
Maryland (Agr. Ext. Ser., Ins. Sur.)		
Eastern Shore	133	305
Southern area	115	121
Western and Central area	103	129
Average	117 2/	185 2/
Minnesota (State Dept. Agr.)		
Southwest	21	66
South Central	12	51
Southeast	0.4	24
West Central	53	56
Central	8	26
East Central	2	15
Northwest	55	152
Average	22	56

1/ Average based on 36 counties surveyed in 1965 and 37 counties in 1966, rather than districts.

2/ Survey in 1965 taken in 21 counties; survey in 1966 taken in 13 counties.

Table 2 - (Continued)

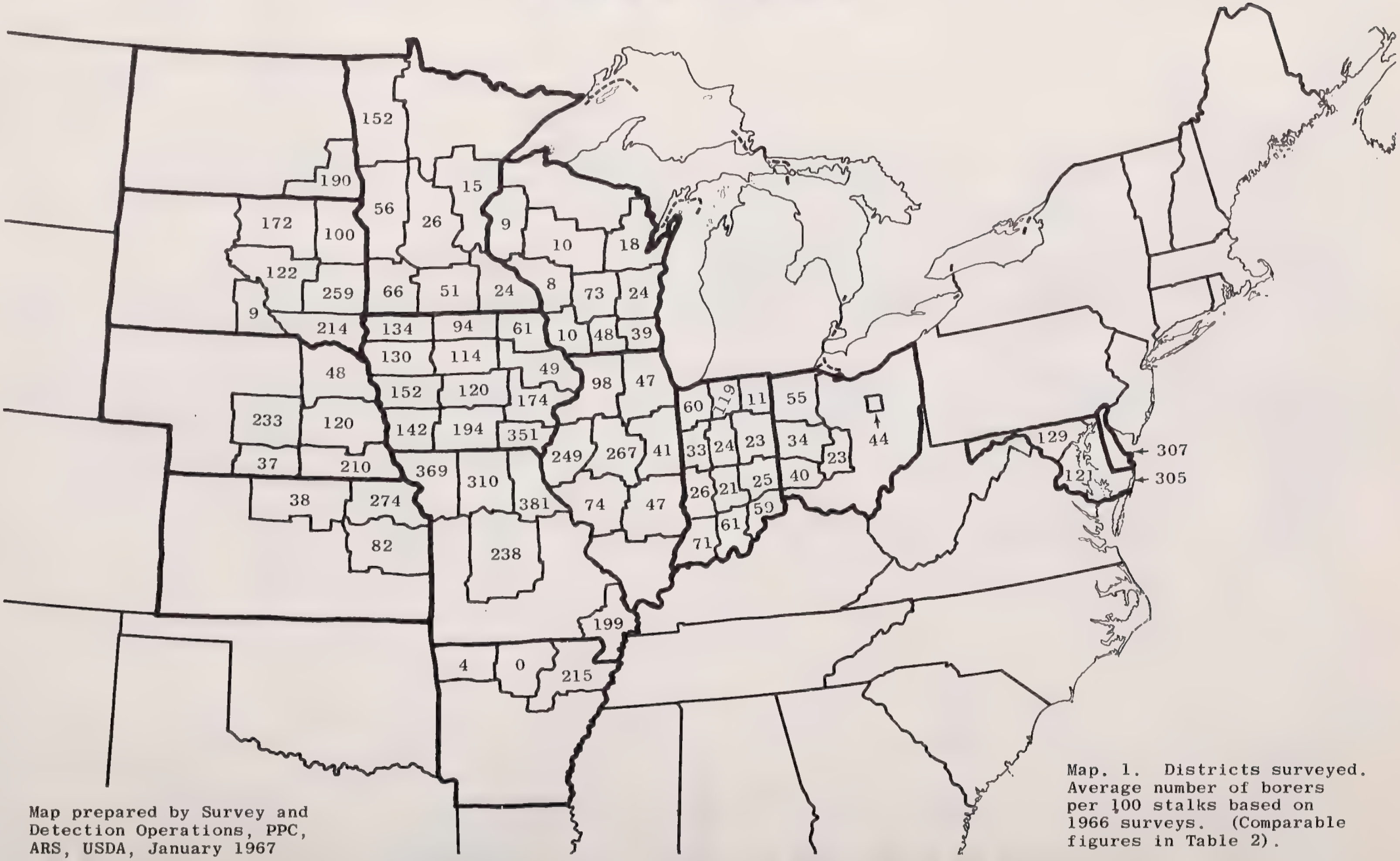
State (Districts or Counties)	Average Number of Borers Per 100 Plants 1965	1966
Missouri (Ext. Ser., Ins. Sur.)		
District I	247	369
District II	180	310
District III	199	381
District V	70	238
District IX	301	199
Average	199 1/	299 1/
Nebraska (Agr. Expt. Sta., Ext. Ser., Ins. Sur.)		
Northeast	13	48
East	87	120
Southeast	156	210
Central	43	233
South	36	37
Average	67 2/	130 2/
North Dakota (State Dept. Agr.)		
Southeast	84	190
Ohio (Ext. Ser.; ARS, USDA)		
Northwest	11	55
West Central	6	34
Central	12	23
Southwest	17	40
Northeast	16	44
Average	12 (11)3/	39 (42)3/
South Dakota (Agr. Expt. Sta., Ext. Ser.)		
North Central	32	172
Northeast	117	100
Central	2	122
East Central	41	259
Southeast	67	214
South Central	5	9
Average	44	146
Wisconsin (State Dept. Agr.)		
Northwest	6	9
North Central	3	10
West Central	4	8
Central	11	73
Southwest	10	10
South Central	8	48
Southeast	2	39
East Central	6	24
Northeast	6	18
Average	6	27

1/ Figure for 1965 adjusted for comparison with 5 districts surveyed in 1966.

2/ Average for 1965 adjusted to exclude north and southwest districts not surveyed in 1966.

3/ Average based on all samples rather than district averages.

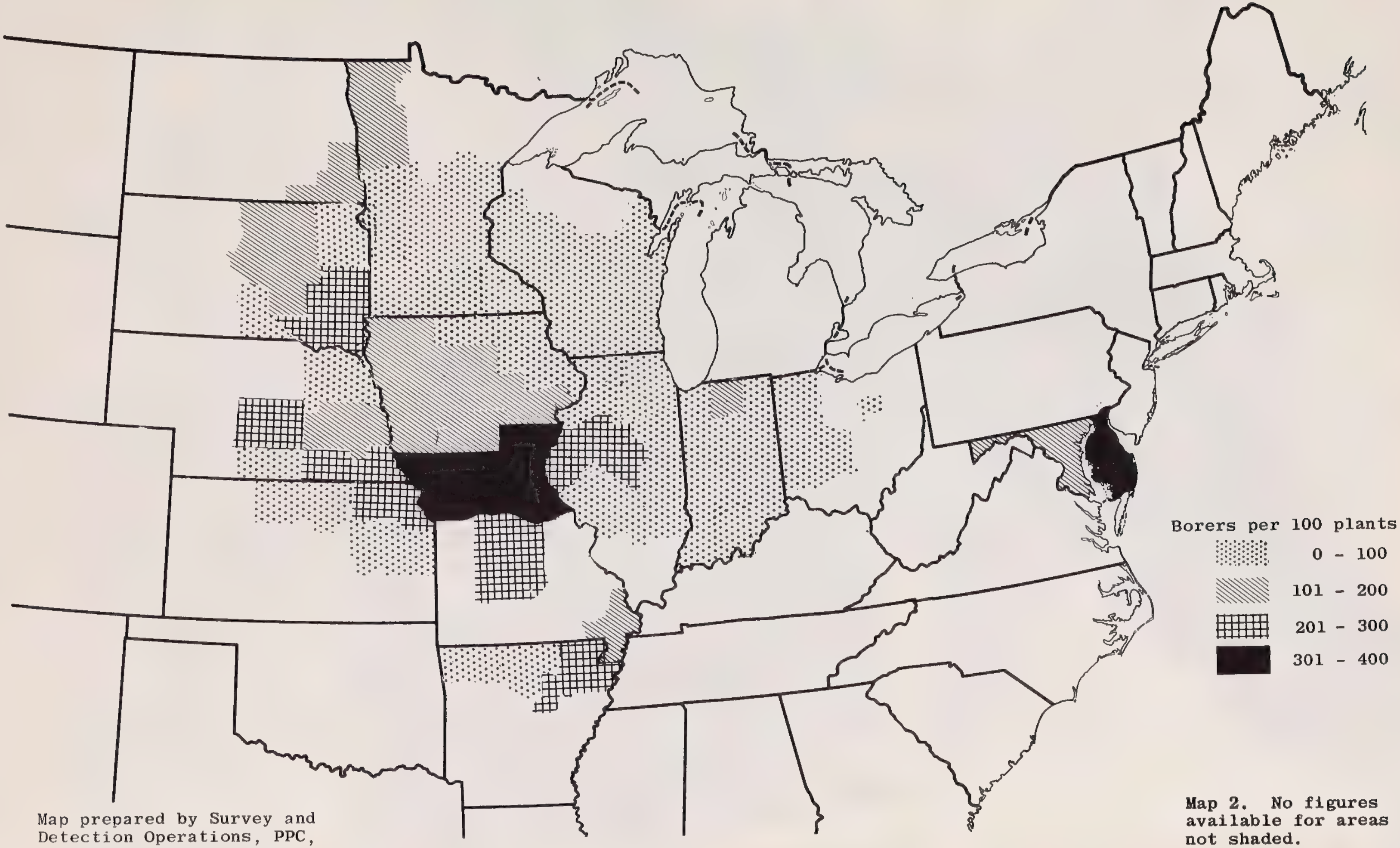
EUROPEAN CORN BORER ABUNDANCE
FALL 1966



Map prepared by Survey and
Detection Operations, PPC,
ARS, USDA, January 1967

Map. 1. Districts surveyed. Average number of borers per 100 stalks based on 1966 surveys. (Comparable figures in Table 2).

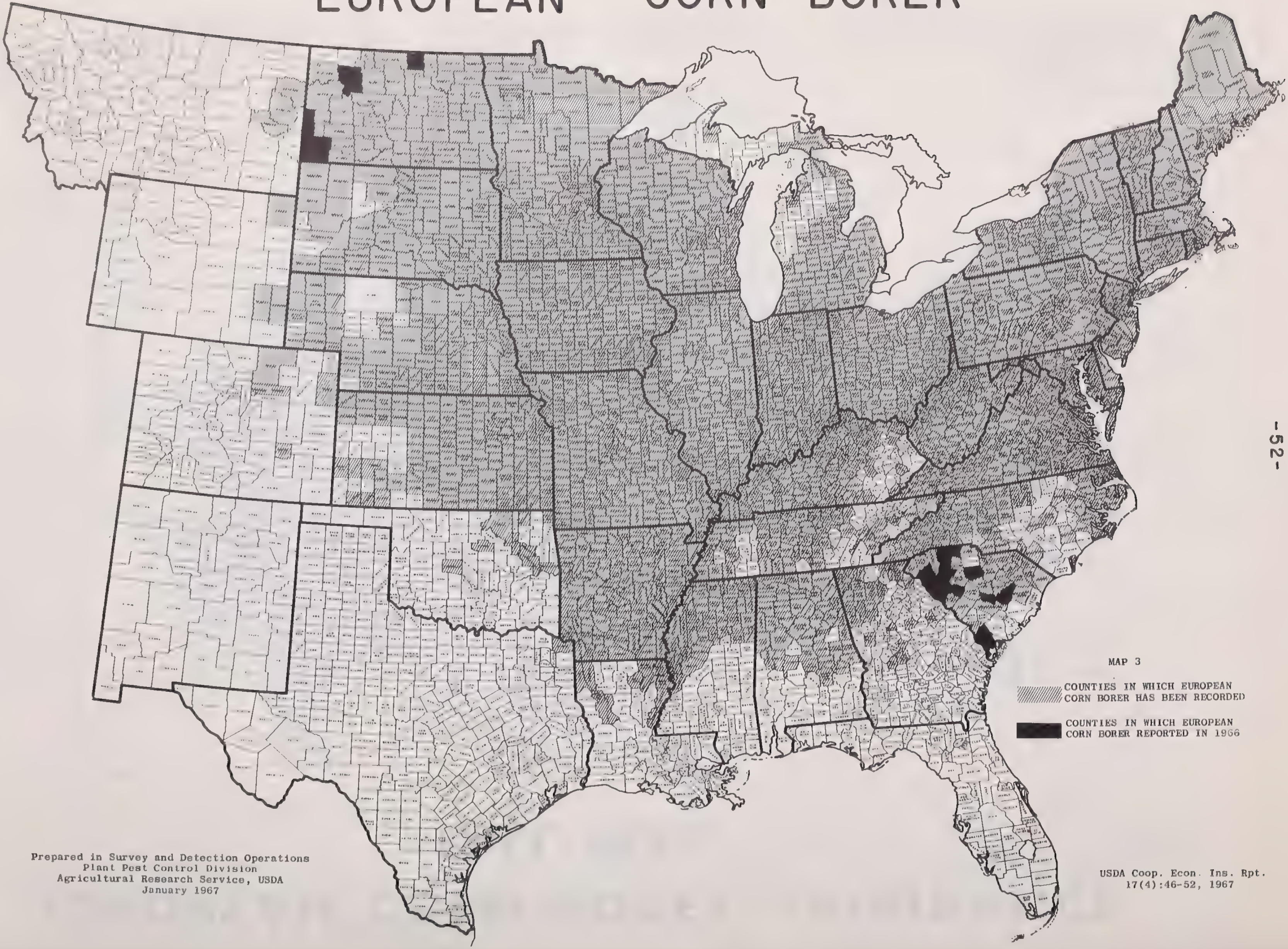
EUROPEAN CORN BORER ABUNDANCE
FALL 1966



Map prepared by Survey and
Detection Operations, PPC,
ARS, USDA, January 1967

Map 2. No figures available for areas not shaded.

EUROPEAN CORN BORER



MAP 3

▨ COUNTIES IN WHICH EUROPEAN CORN BORER HAS BEEN RECORDED
■ COUNTIES IN WHICH EUROPEAN CORN BORER REPORTED IN 1966

Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
January 1967

USDA Coop. Econ. Ins. Rpt.
17(4):46-52, 1967

Boll Weevil Hibernation Survey - Fall 1966

The fall collections of surface ground (woods) trash samples (two square yards per sample) have been completed in 6 Southern States by State and Federal agencies to determine the number of boll weevil (Anthonomus grandis) adults that went into hibernation. A total of 3 samples was collected at each location in the Carolinas, Mississippi, Louisiana and Texas; 10 samples were taken in Tennessee. In North and South Carolina, 30 locations were sampled in each area, with numbers of counties per area from which samples were taken varying from 3 to 6. In Mississippi, a total of 45 samples was taken from 15 locations in each of 4 areas; each area was composed of 2 counties. A total of 40 locations was sampled in northeastern Louisiana; 20 locations in Madison Parish and 10 locations each in Tensas and East Carroll Parishes. In Texas, 75 samples were taken in either 6 or 7 locations in each of 4 counties.

Average counts (live weevils per acre) exceeded those of the fall of 1965 in south central South Carolina, north central North Carolina, the Piedmont of North and South Carolina, the southern tier of counties in Tennessee and in central Texas. Counts were lower in the fall of 1966 in the Coastal Plain of North and South Carolina, all areas surveyed in Mississippi and in northeastern Louisiana.

In Florence County, South Carolina, where fall examinations have been made since 1942 (except the fall of 1946), the number of weevils per acre (5,972) is the lowest since 1959.

In Tennessee, McNairy, Fayette and Hardeman Counties were surveyed as they supported the heaviest infestations during the 1966 season. The number of weevils per acre was 7,120 in these counties, compared with 1,211 in 1965, 807 in 1964, 1,089 in 1963, 3,633 in 1962 and 3,025 in 1961. The figures for 1965 through 1961 are for McNairy County only. Fourteen weevils were found in one two-square-yard sample, indicating that there are 33,880 weevils in hiberation around that field. This is the highest number of weevils ever found since this survey was initiated in 1950.

The 1966 State average for Mississippi was 2,956 live weevils per acre of ground trash compared with 7,325 in 1965, 4,545 in 1964, 3,010 in 1963, 6,213 in 1962 and 8,403 in 1961. There were fewer weevils present in every county in the fall of 1966 than in the fall of 1965.

The average number of boll weevils per acre in the tri-parish area of northeast Louisiana was 3,166 compared with 3,349 in 1965. The average by parish was 4,640 in Madison, 1,372 in East Carroll and 2,017 in Tensas. During the past 11 years that these records have been made in the tri-parish area, the number of weevils per acre has ranged from 2,017 to 13,443 and averaged 5,434 in Madison Parish; 5,165 to 13,235 and averaged 8,125 in East Carroll Parish; and 0 to 17,593 and averaged 6,371 in Tensas Parish. Light frost occurred October 20, 26 and 27 with a minimum of 32 degrees recorded October 27. A hard freeze occurred November 3 with a minimum of 18 degrees. Heavy loss of late-maturing cotton resulted. Several dead weevils were observed in second-growth cotton. Trash collected was very dry as the result of only 1.6 inches of rain during 3-week period ending November 8.

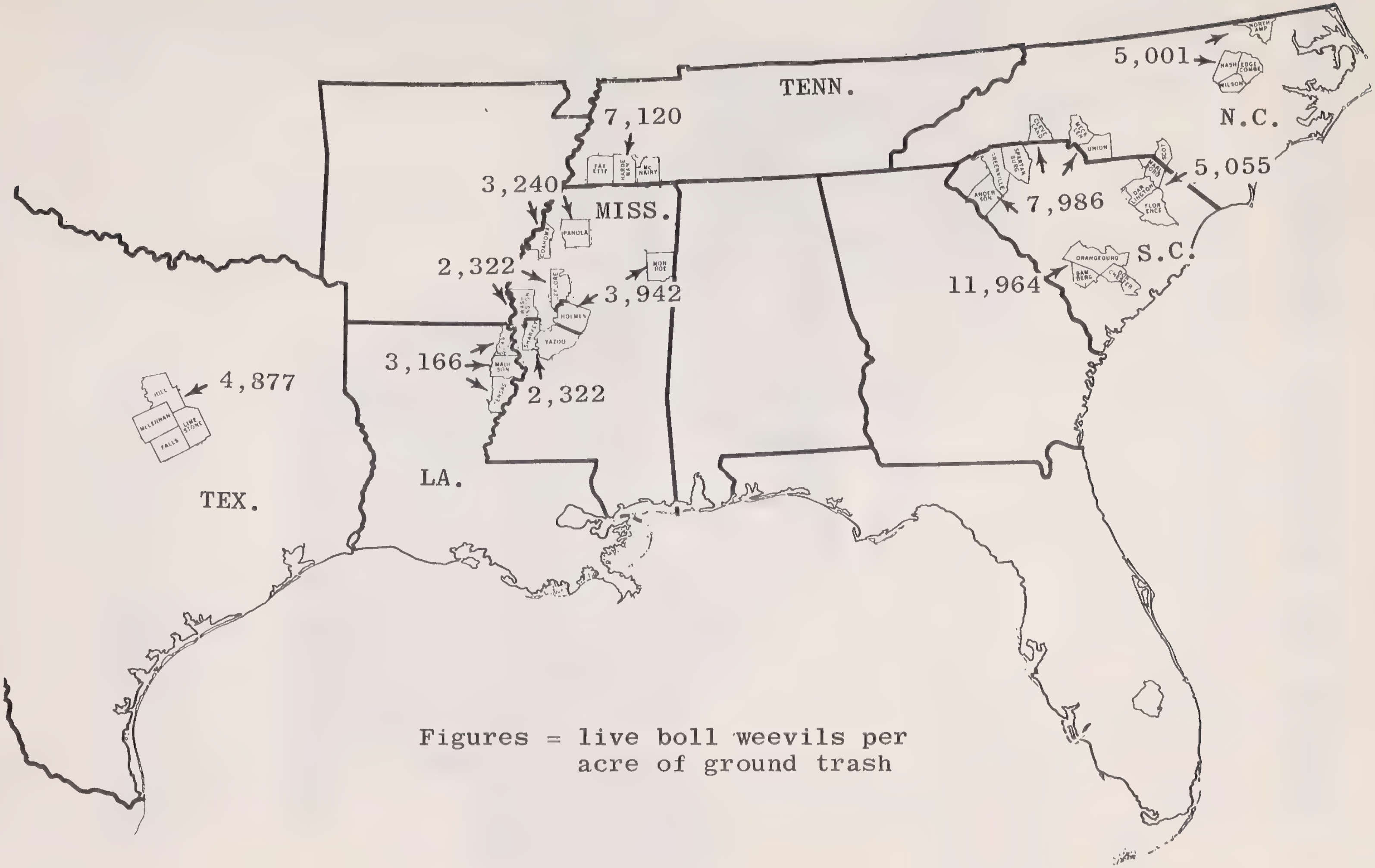
In central Texas, the area average of 4,877 boll weevils per acre in the fall of 1966 compares with averages of 4,425 in 1965, 4,406 in 1964, 517 in 1963, 1,781 in 1962, 4,414 in 1961, 4,501 in 1960 and 6,631 in 1959. In the fall of 1966, more boll weevils entered hibernation than in any year since 1959. Heavy rains in the spring delayed planting which resulted in a considerable acreage of late-planted cotton. This was similar to the spring of 1965. Heavy rains during late August and throughout September resulted in heavy regrowth and fruiting. Harvest and stalk destruction were also delayed. Heavy boll weevil populations built up and moved into hibernation. (H. M. Taft, A. R. Hopkins, J. H. Locke, T. C. Cleveland, C. B. Cowan). See table and map on following two pages.

BOLL WEEVIL HIBERNATION SURVEYS - FALL 1966

Area (County and State)	Number of Weevils Per Acre 1965	Number of Weevils Per Acre 1966
NORTH AND SOUTH CAROLINA		
South Central South Carolina (Orangeburg, Bamberg and Dorchester Counties)	3,899	11,964
Coastal Plain of South and North Carolina (Florence, Darlington and Marlboro Counties, S. C.; Scotland County, N. C.)	15,273	5,055
Piedmont of South and North Carolina (Anderson, Greenville and Spartanburg Counties, S. C.; Mecklenburg, Cleveland and Union Counties, N. C.)	7,233	7,986
North Central North Carolina (Northampton, Nash, Wilson and Edgecombe Counties)	4,492	5,001
TENNESSEE		
Southern Tier of Counties (McNairy, Fayette and Hardeman)	1,211	7,120
MISSISSIPPI		
South Delta (Sharkey and Yazoo Counties)	6,696	2,322
Central Delta (Washington and Leflore Counties)	3,456	2,322
North Delta (Coahoma and Panola Counties)	6,480	3,240
Hill Section (Holmes and Monroe Counties)	12,798	3,942
LOUISIANA		
Northeastern (East Carroll, Madison and Tensas Parishes)	3,349	3,166
TEXAS		
Central (Falls, Hill, Limestone and McLennan Counties)	4,425	4,877

See map on following page.

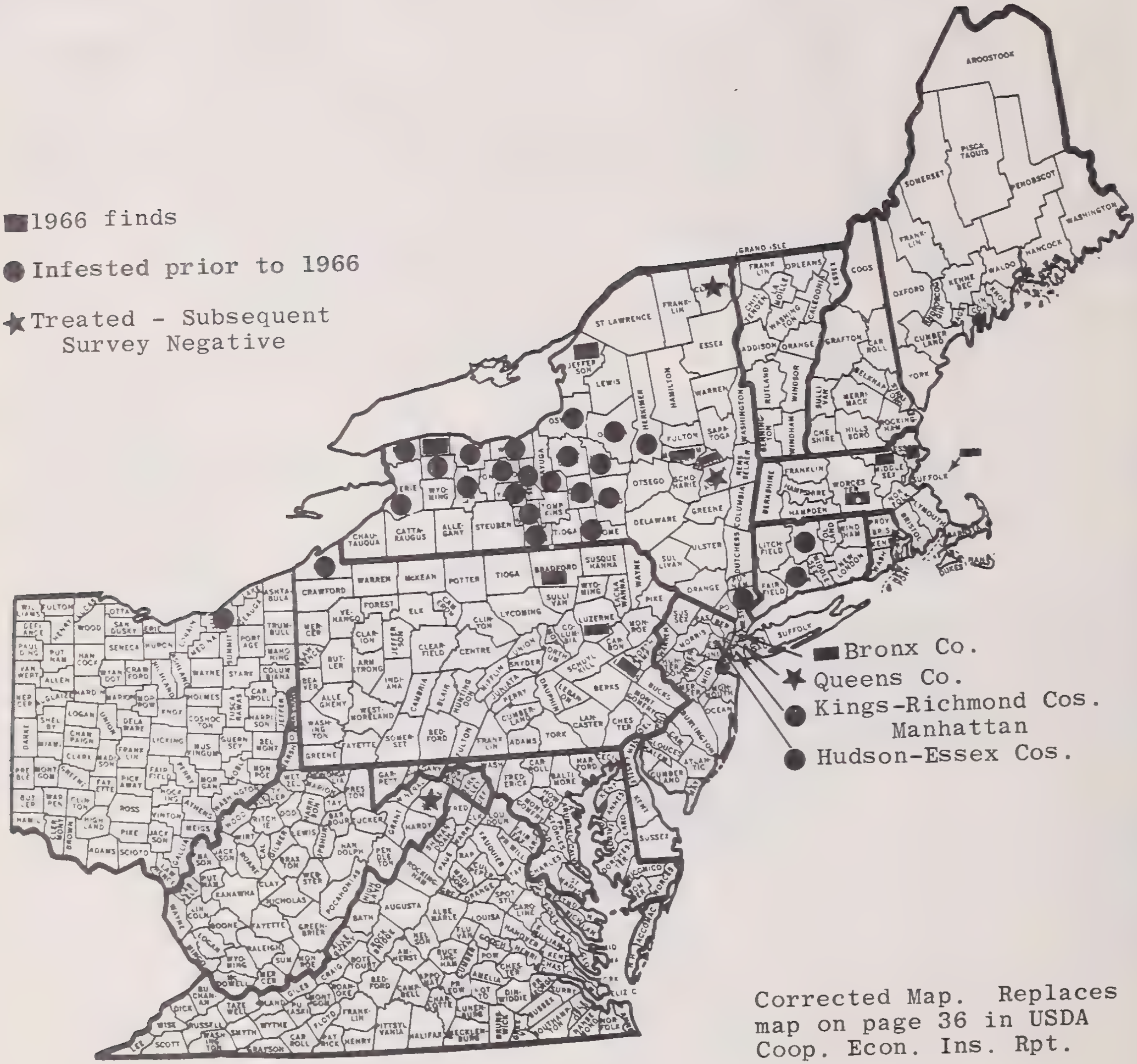
BOLL WEEVIL HIBERNATION SURVEYS - FALL 1966



Figures = live boll weevils per acre of ground trash

USDA Coop. Econ. Ins. Rpt.
17(4):55, 1967

Status of European Chafer - 1966



Corrected Map. Replaces map on page 36 in USDA Coop. Econ. Ins. Rpt. 17(3).

Prepared in Survey and Detection Operations
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Agricultural Research Service, USDA

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